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ENVIRONMENTAL CONSERVATION SERVICE

BASELINE STUDIES PROGRAM, FISCAL YEAR 1984/85

EABS Miscellaneous Report, No. 2.

CANADIAN WILDLIFE SERVICE
INLAND WATERS DIRECTORATE
LANDS DIRECTORATE

Canada

BASELINE STUDIES PROGRAM, FISCAL YEAR 1984/85

EABS Miscellaneous Report, No. 2

Environmental Assessment and Baseline Studies (EABS) Program

ENVIRONMENTAL CONSERVATION SERVICE
Canadian Wildlife Service
Inland Waters Directorate
Lands Directorate

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1. BACKGROUND

This report outlines Environment Canada's Baseline Studies Program (BSP*) for fiscal year 1984/85. The total BSP budget for that year was $200.0K, the resources being derived through a levy on all services. These resources were transferred to the five DOE regions, to be allocated to baseline studies proposed in the 1983/84 fiscal year and approved by the respective Regional Director General (RDG).

The Assistant Deputy Minister (ADM) of the Environmental Conservation Service (ECS) is responsible for reporting on Baseline studies on behalf of the department. To fulfill this responsibility, the ECS coordinator for the BSP acquires from each RDG data on each study carried out, including allocated resources, supplemental resources, objective, agency carrying out the study, and outputs (deliverables). These data have formed the basis for this report.

2. BASELINE STUDIES (FISCAL YEAR 84/85)

Nationally, the Baseline Studies funds were employed for highly diverse types of studies and by a range of lead agencies. For the most part, the funds were used for studies related to three broad types of environmental categories:

1. The potential environmental impacts of energy-related activities, and particularly hydrocarbon exploration and development.

2. Conservation of important wetland habitats.

3. Climatic patterns, particularly for maritime environments.

Specific studies within each of the five DOE regions are highlighted below.

2.1 Pacific and Yukon Region

More than half of the Baseline Studies resources in Pacific and Yukon Region were devoted to studies related to hydrocarbon exploration and development: benthic conditions (trace metal and hydrocarbon levels in marine sediments and tissues of marine animals and benthic population data) in potential western offshore hydrocarbon exploration areas ($8K); and water quality, sediment characteristics, and biological conditions at Stokes Point and King Point in the northern Yukon ($14.6K). The remaining resources were used for a variety of study types: baseline population levels of three Rhinoceros auklet colonies along the B.C. coast (possibly with respect to potential hazards due to hydrocarbon exploration, extraction, and transportation), and growth rates for young individuals; evaluation of wind statistics for the

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* Various acronyms used in this report ae summarized at the end of the BSP summary table.

rates for young individuals; evaluation of wind statistics for the northern coastal areas of B.C.; and atmospheric sampling at selected locations within the summer range of the Porcupine caribou herd.

2.2 Western and Northern Region

All resources were devoted to environmental monitoring projects related to hydrocarbon development activities in the Northwest Territories; $20K were spent on BEMP and $20K on MEMP. These represented part of the DOE commitments to DIAND-coordinated projects costing $110K and $160K, respectively.

2.3 Ontario Region

Three projects and $25.5K were related to the conservation/preservation of priority wetlands in Ontario, including the Oshawa Second Marsh; much of the effort was focused on encouraging landowners to preserve valuable wetlands as an alternative to government acquiring the property. Other projects included: land use monitoring with respect to areas designated for potential extraction of aggregate materials and Canada Land Inventory agricultural capability for three urban-centred regions of southern Ontario; and a review of sampling methods and users/uses of sediment data.

2.4 Quebec Region

Quebec Region purchased an IBM computer for the storage and processing of baseline data ($8.2K). The fall (1984) federal government freeze on spending interupted the Region's plans to contract for a regional strategy plan for environmental quality of the St. Lawrence corridor; the remaining $31.8K of the baseline studies fund were returned to consolidated funds.

2.5 Atlantic Region

More than half of the resources ($23K) were used for studies related directly to energy development in the region: mitigating or minimizing major environmental impacts from coal-related activities; hydrologic design methods for small-scale hydroelectric projects at ungauged sites; preparation of an atlas illustrating the temporal and spatial distributions of seabirds in the western North Atlantic to assist industry in hydrocarbon exploration and development; and a review of environmental concerns related to hydrocarbon development on the Grand Banks. A further $10K was spent on a study to identify the needs and feasibility of 'interfacing' sources of marine environmental quality data within the department. The remaining two studies ($5K and $2K, respectively) were used for climatological studies: up-dating and consolidating a catalogue of tracks of tropical cyclones affecting Atlantic Canada; and determining design winds and over-water gust factors for the Bay of Fundy and adjacent coastal areas.

3. USE OF BASELINE FUNDS

One of the initial hopes with respect to the Baseline Study Program was that the BSP resources would be used as 'catalysts' for projects -- ie, for proposed projects, it was hoped that the initiating agency would be encouraged to supplement the BSP funds with its own A-base resources or seek external funding so that research carried out would be substantially greater than what could be accomplished solely using the BSP funds. Comparing the "baseline Funds" and "Supplementary Funds" columns in the summary table (Appendix 1), this has been achieved fairly successfully. In other cases, the Baseline Funds have been used as stand-alone funds where necessary.

3.1 Pacific and Yukon Region

The $40K BSP funds were supplemented by a total of $17.24K. Only two of the five projects, however, really received supplementary funding (the AES A-Base contribution was simply for printing extra copies of the report). The dollar value of the use of DFO ship facilities and DOE person-months for involvement is difficult to evaluate and so has not been included.

3.2 Western and Northern Region

The striking feature for this region is the large dollar value under supplementary resources. The table is misleading for the Region since the BSP funds are not being supplemented by $90K and $140K respectively; rather, MEMP and BEMP are baseline programs initiated externally to DOE, and our BSP funds are in reality supplementing the resources of other agencies.

3.3 Ontario Region

The $40K BSP funds were supplemented by a total of $34.5K, most of which came from the Ontario Heritage Foundation. As with Pacific and Yukon Region, only two of the five projects received supplementary resources, and the value of the time contributed by DOE staff was not estimated.

3.4 Quebec Region

No supplementary resources.

3.5 Atlantic Region

The BSP funds were supplemented by $69.05K as well as by at least 2.7 person-years (absorbed by AES, Transport Canada, and EMR). As well as the relatively high level of supplementary resources for this region, four of the five projects were supported.

4. PROPOSED BASELINE STUDIES (85/86)

The RDG's have also been requested to provide the ADM (ECS) with forecasted resource expenditures for the upcoming fiscal year. As only the Ontario and Atlantic regions provided proposed studies, the forecasted use of BSP resources for 1985/86 is largely unknown.

APPENDIX 1

BASELINE STUDIES (84/85) - SUMMARY TABLE

BASELINE STUDIES PROGRAM 84/85

REGION	INITIATING AGENCY	TITLE/OBJECTIVE	BSP FUNDS ($K)	SUPPLEMENTARY RESOURCES ($K, P/Y)	STUDY LEADER
Pacific & Yukon	EPS	Benthic Conditions in Offshore Exploration Lease Areas West Coast - to characterize benthic conditions in potential offshore hydrocarbon exploration areas.	8.0	DFO - ship facilities	EPS
	EPS	Water Quality and Biological Survey of Stokes Point and King Point, Yukon - Beaufort Sea Coast 1984 - to provide a second year of baseline data at each site to more accurately describe background water quality, sediment characteristics, and biological conditions prior to industrial development.	14.6	10.0 (EPS A-Base)	EPS
	CWS	Baseline Population Biology of Rhinoceros Auklet Colonies - to determine baseline levels and develop a method for monitoring reproductive success in Rhinoceros Auklets.	7.0	7.0 (CWS Seabird Monitoring Project)	CWS
	AES	An Evaluation of the Effects of Averaging Times on the Wind Statistics of the North Coast of B.C. - to examine the relationship between windspeeds averaged over different time intervals using wind records from northern B.C. coastal weather observation stations. Results are of interest in marine structure design, wind climate studies, and the estimation of the return period for extreme wind events.	5.0	0.24 (AES A-Base)	Envi. Sciences Ltd., Vancouver
	CWS	Porcupine Caribou Project - Atmospheric Sampling Station - rental.	4.0		CWS

BASELINE STUDIES PROGRAM 84/85

REGION	INITIATING AGENCY	TITLE/OBJECTIVE	BSP FUNDS ($K)	SUPPLEMENTARY RESOURCES ($K, P/Y)	STUDY LEADER
Western & Northern	INAC	Mackenzie Environmental Monitoring Project - to design an environmental monitoring and research program which will address potential onshore and freshwater environmental impacts connected with the production and onshore transportation of hydrocarbons, and related activities.	20.0	90.0 (20.0 DFO, 10.0 GNWT, and 60.0 INAC)	LGL Ltd., Environmental Sciences Ltd., and Environmental Social System Analysts Ltd.
	INAC	Beaufort Environmental Monitoring Project - to design the operation and evaluation of a comprehensive and defensible marine environmental research and monitoring program to accompany phased hydrocarbon development in the Beaufort Sea.	20.0	140.0 (120.0 INAC, 10.0 CWS, and 10.0 EPS)	LGL Ltd., Environmental Sciences Ltd., and Environmental Social System Analysts Ltd.
Ontario	ORDG	Landowner Notification Pilot Projet and Priority Wetlands in Ontario Study - to identify priority wetlands and determine the feasibility of protecting wetlands, list high priority wetlands, conduct pilot study of owners regarding their willingness to register such areas under voluntary protection, and design a brochure on wetland values.	9.5	25.0 (Ontario Heritage Foundation)	Federation of Ontario Naturalists and Dr. S. Hilts, U. of Guelph

BASELINE STUDIES PROGRAM 84/85

REGION	INITIATING AGENCY	TITLE/OBJECTIVE	BSP FUNDS ($K)	SUPPLEMENTARY RESOURCES ($K, P/Y)	STUDY LEADER
Ontario	CWS, ORDG	Oshawa Second Marsh - to prepare draft plan for long-term marsh management, summarize plan into an 'Options Paper' for use in ongoing discussions regarding long-term marsh preservation and management, and complete a regional market study for marsh educational and public appreciation facilities.	10.0, 1.5		E. Bottomley and Second Marsh Defense Assoc.
	ORDG	Wetland Owner's Attitudes - to determine landowner attitudes regarding various methods of preserving valuable wetlands.	4.5		Ms. L. Pietras
	ORDG	Mineral Aggregate Resource Mapping - to delineate areas of potential aggregate extraction and overlay with CLI agricultural capability units for the Niagara, Halton, and Kitchener-Waterloo Urban-Centred Regions to determine the long-term implications of aggregate extraction on agriculture.	9.0		ORDG, Lands Directorate
	IWD	Review of Sediment Survey Data - to question users and collectors regarding data and methodological needs, review literature, and prepare recommendations for the coordination of sediment information, data accuracy, sampling network, and other concerns.	5.6	9.5 (IWD A-Base)	Conservation Mgmt. System

BASELINE STUDIES PROGRAM 84/85

REGION	INITIATING AGENCY	TITLE/OBJECTIVE	BSP FUNDS ($K)	SUPPLEMENTARY RESOURCES ($K, P/Y)	STUDY LEADER
Atlantic	AES	Analysis of Gannet Rock and Southwest Head Wind Data and Determination of Gust Factors over the Ocean - to determine design winds and over-water gust factors for the Bay of Fundy and adjacent coastal areas.	2.0	1.05 (AES), 1.7 P/Y absorbed by AES and Transport Canada	AES
	CWS	Atlas for Eastern Canadian Seabirds - Shipboard Component - to produce a shipboard-based atlas illustrating the temporal and spatial seabird distributions in the western North Atlantic. The information is needed to shape departmental positions and advise industry in hydrocarbon exploration and development.	5.0	15.0 (CWS)	CWS
	EPS	Needs and Feasibility of Interfacing Sources of Marine Environmental Quality Data Within Environment Canada - to evaluate the need for data interaction by Environment Canada and present recommendations regarding the feasibility of interfacing data regionally.	10.0		
	ORDG	A review of environmental concerns related to hydrocarbon development on the Grand Banks - to identify environmental concerns related to offshore hydrocarbon development through interviews with representatives of government, research institutes, industry, and public interest groups, followed by a workshop to agree on issues and finalize the report.	1.0	7.5 (EPS-HQ) 11.5 (ORDG) 1.0 P/Y (EMR)	ORDG

BASELINE STUDIES PROGRAM 84/85

REGION	INITIATING AGENCY	TITLE/OBJECTIVE	BSP FUNDS ($K)	SUPPLEMENTARY RESOURCES ($K, P/Y)	STUDY LEADER
Atlantic	EPS, IWD	Bridgeport Basin Baseline Study - to characterize the effects of the coal cycle on freshwater resources, identify potential future impacts on the watershed, and identify remedial measures and management strategies to mitigate or minimize major coal activity impacts.	12.0	12.0 (N.S. Power Corp.), 22.0 (Cape Breton Devel. Corp.)	EPS, IWD

KEY TO ACRONYMS

AES - Atmospheric Environment Service

BEMP - Beaufort Environmental Monitoring Project

BSP - Baseline Studies Program

CWS - Canadian Wildlife Service

DFO - Department of Fisheries and Oceans

EABS - Environmental Assessment and Baseline Studies

EMR - Energy, Mines and Resources

EPS - Environmental Protection Service

GNWT - Government of the Northwest Territories

HQ - Headquarters

IWD - Inland Waters Directorate

P/Y - Person-years

MEMP - Mackenzie Environmental Monitoring Project

ORDG - Office of the Regional Director General

PERD - Panel on Energy Research and Development

$K - Thousands of dollars

APPENDIX 2

REGIONAL STUDY SHEETS

BASELINE STUDIES

REGION: Pacific and Yukon. FISCAL YEAR: 1984/85.

STUDY TITLE: Benthic Conditions in Offshore Exploration Lease Areas West Coast.

STUDY CONDUCTED BY: EPS.

CONTACT OFFICER: L. Harding.

BASELINE FUNDS ALLOTMENT AND AGENCY: $8.0K EPS.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY(S): Institute of Ocean Sciences (DFO) - ship facilities; Environment Canada - staff time for sample collection.

STUDY OBJECTIVE: To characterize benthic conditions in potential offshore hydrocarbon exploration areas.

LOCATION OF STUDY: Hecate Strait.

DELIVERABLE PRODUCTS: Report on metal levels in Hecate in comparison to other West Coast areas.

BASELINE STUDIES

REGION: Pacific and Yukon. FISCAL YEAR: 1984/85.

STUDY TITLE: Water Quality and Biological Survey of Stokes Point and King Point, Yukon - Beaufort Sea Coast 1984.

STUDY CONDUCTED BY: Environmental Protection Service (EPS), Yukon.

CONTACT OFFICER: G.R. Mackenzie-Grieve.

BASELINE FUNDS ALLOTMENT AND AGENCY: $14.6K EPS.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY: $10.0K EPS A-Base Laboratory Analysis. This does not include personnel time for conducting and managing the project.

STUDY OBJECTIVE: To provide a second year of baseline data at each site to more accurately describe background water quality, sediment characteristics, and biological conditions prior to industrial development.

LOCATION OF STUDY: Beaufort Sea Coast, Yukon.

DELIVERABLE PRODUCTS: Data report incorporating information from previous 1983/84 data reports for the area.

BASELINE STUDIES

REGION: Pacific and Yukon. FISCAL YEAR: 1984/85.

STUDY TITLE: Baseline Population Biology of Rhinoceros Auklet Colonies.

LEAD AGENCY: Canadian Wildlife Service.

CONTACT OFFICER: G.W. Kaiser.

BASELINE FUNDS ALLOTMENT AND AGENCY: $7.0K CWS.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY: Funds matched by CWS Seabird Monitoring Project.

STUDY OBJECTIVE: To determine baseline levels and develop a method for monitoring reproductive success in Rhinoceros Auklets.

GOALS: Test Ricklef's shortcut method for constructing growth curves for young (initiated 1983).

Compare growth rates for young on three different colonies (initiated 1984).

Develop standardized monitoring technique by 1986.

METHODOLOGY: There are only three large colonies of Rhinoceros Auklet in B.C.: Lucy Island near Prince Rupert, Triangle Island off the northwest coast of Vancouver Island, and Pine Island near Port Hardy. Samples of 40 or more chicks were weighed on two occasions exactly 240 hours apart and an approximate growth curve was constructed. Food samples were collected, weighed, and separated by species on the assumption that differences in prey availability might help explain variability in the study growth curves.

LOCATION OF STUDY: Lucy Island, Triangle Island, and Pine Island, British Columbia.

DELIVERABLE PRODUCTS: A project report discussing the results and recommending changes to the procedure will be completed by the end of the fiscal year.

BASELINE STUDIES

REGION: Atlantic. FISCAL YEAR: 1984/85.

STUDY TITLE: Needs and Feasibility of Interfacing Sources of Marine Environmental Quality Data Within Environment Canada.

STUDY CONDUCTED BY: EPS.

CONTACT OFFICER: E. Norrena.

BASELINE FUNDS ALLOTMENT AND AGENCY: $10.0K EPS.

STUDY OBJECTIVE: To evaluate the need for data interaction by EC and present recommendations regarding the feasibility of interfacing data regionally, for example, by participating in the proposed Marine Resource Information Service.

LOCATION OF STUDY: Halifax/Dartmouth.

DELIVERABLE PRODUCTS: Report.

BASELINE STUDIES

REGION: Atlantic. FISCAL YEAR: 1984/85.

STUDY TITLE: A Review of Environmental Concerns Related to Hydrocarbon Development of the Grand Banks.

STUDY CONDUCTED BY: ORDG.

CONTACT OFFICER: D. Kelly.

BASELINE FUNDS ALLOTMENT AND AGENCY: $1.0K ORDG.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCIES: $7.5K EPS - HQ, $11.5K ORDG.

In the management of the contract, Environment Canada was assisted by EMR & PERD. An estimate of this contribution is 1PY.

STUDY OBJECTIVE: To identify environmental concerns related to offshore hydrocarbon development on the Grand Banks. The concerns were identified through a series of interviews held with representatives from federal and provincial governments, research institutions, industry and public interest groups. Following these interviews, a workshop was organized in St. John's, Newfoundland, with various agencies and individuals to agree on they issues and to finalize the report.

LOCATION OF STUDY: Grand Banks.

DELIVERABLE PRODUCTS: Report.

BASELINE STUDIES

REGION: Pacific and Yukon. FISCAL YEAR: 1984/85.

STUDY TITLE: An Evaluation of the Effects of Averaging Times on the Wind Statistics of the North Coast of B.C.

STUDY CONDUCTED BY: Atmospheric Environment Service (AES).

CONTACT OFFICER: H.T. Beal, Scientific Services, AES, 1700 - 1200 West 73rd Avenue, Vancouver, B.C. (604) 666-6899.

BASELINE FUNDS ALLOTMENT AND AGENCY: $5.0K AES.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY: An additional $0.24K from AES for extra copies of final report.

STUDY OBJECTIVES: To examine the relationship between windspeeds averaged over different time intervals using wind records from northern B.C. coastal weather observing stations. To investigate the effect of wind averaged over various time intervals upon the prediction of extreme windspeeds and wind duration (or persistence).

The study results should be of interest for the design of marine structures, wind climate studies, and the estimation of the return period for extreme wind events.

LOCATION OF STUDY: Vancouver, B.C.

DELIVERABLE PRODUCTS: A report describing the data analysis and results.

STATUS: Study completed on March 15, 1985 with final report (59 pp in total).

BASELINE STUDIES

REGION: Western and Northern. FISCAL YEAR: 1984/85.

STUDY TITLE: Mackenzie Environmental Monitoring Project (MEMP).

STUDY CONDUCTED BY: LGL Environmental Research Associates Ltd., Environmental Science Ltd., and Environmental & Social Systems Analysts Ltd.

CONTACT OFFICER: F. McFarland, Northern Affairs Program, INAC.

BASELINE FUNDS ALLOTMENT AND AGENCY: $20.0K INAC.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCIES: $20.0K DFO, $10.0K GNWT, $60.0K INAC.

STUDY OBJECTIVE(S): To design an environmental monitoring and research program which will address potential onshore and freshwater environmental impacts connected with the production and onshore transportation of hydrocarbons, and related activities: such as increased exploration and onshore facilities associated with the production of hydrocarbons from the Beaufort Sea region and along the lower Mackenzie River system.

The monitoring and research program should:

- address the potential environmental impacts associated with industrial activities including those impacts affecting wildlife management, renewable resource harvesting and environmental conservation;

- be applicable and practical and designed to provide environmental and renewable resource management agencies with information to ensure acceptable levels of environmental protection; and

- be supported with a full scientific and technical justification for the monitoring and research needs identified.

This study involves specialists from industry, YTG, GNWT, INAC, DFO, DOE and participation by western Arctic aboriginal groups.

LOCATION OF STUDY: Yukon North Slope, Tuk Peninsula, lower Mackenzie valley.

DELIVERABLE PRODUCTS: Plan for initiation of multi-year project. Conceptual model of physical and biological processes.

BASELINE STUDIES

REGION: Western and Northern. FISCAL YEAR: 1984/85.

STUDY TITLE: Beaufort Environmental Monitoring Project (BEMP).

STUDY CONDUCTED BY: LGL Environmental Research Associates Ltd., Environmental Sciences Ltd., and Environmental & Social Systems Analysts Ltd.

CONTACT OFFICER: D. Stone
Northern Affairs Program, INAC.

BASELINE FUNDS ALLOTMENT AND AGENCY: $10.0K INAC, $10.0K CWS.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCIES (estimates): $120.0K INAC, $10.0K CWS, $10.0K EPS

STUDY OBJECTIVE: To provide INAC and DOE with the technical basis for design, operation, and evaluation of a comprehensive and defensible marine environmental research and monitoring program to accompany phased hydrocarbon development in the Beaufort Sea. This will be done by:

- addressing those impacts that could be most significant if they occurred;
- developing an understanding based on the best current understanding of industrial development scenarios and ecological processes;
- preparing a plan that has the capability to respond to changing industrial development scenarios and new information regarding ecological processes in the region; and
- accessing the viewpoint of a broad range of disciplinary specialists with the necessary experience in marine research and environmental management in the Beaufort Sea.

This project involves specialists from industry, DFO, INAC, DOE, and GNWT.

LOCATION OF STUDY: Offshore Beaufort Sea.

DELIVERABLE PRODUCTS: Results of research on key marine monitoring needs; testing and revisions to impact hypotheses; modifications and verification of research and monitoring plan.

BASELINE STUDIES

REGION: Ontario. FISCAL YEAR: 1984/85.

STUDY TITLE: Landowner Notification Pilot Project and Priority Wetlands in Ontario.

STUDY CONDUCTED BY: Federation of Ontario Naturalists, and Dr. S. Hilts, University of Guelph

CONTACT OFFICER: D. Cowell, ORDG, 55 St. Claire Ave. East, Toronto.

BASELINE FUNDS ALLOTMENT AND AGENCY: $9.5K ORDG.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY: $25.0K Ontario Heritage Foundation.

STUDY OBJECTIVES: 1. To identify priority wetlands in Ontario and determine the feasibility of protecting wetlands by means other than outright purchase or land use control.
2. To list high priority wetlands by synthesizing existing baseline data.
3. To select several wetlands for a landowner notification pilot study in which owners are contacted regarding their willingness to register such areas under voluntary protection.
4. To design a brochure on wetland values.

LOCATION OF STUDY: Southern Ontario.

DELIVERABLE PRODUCTS: A draft brochure "Wetlands Are Special Places"; a draft report "Important Wetlands in Ontario-South of the Precambrian Shield"; and a draft report "Landowner Contact Pilot Project Final Report: 1984".

BASELINE STUDIES

REGION: Ontario. FISCAL YEAR: 1984/85.

STUDY TITLE: Oshawa Second Marsh.

STUDY CONDUCTED BY: E. Bottomley and Second Marsh Defence Association.

CONTACT OFFICER: D. Cowell, ORDG, 55 St. Claire Ave. East, Toronto.

BASELINE FUNDS ALLOTMENT AND AGENCY: $ 1.5K ORDG and $10.0K CWS

STUDY OBJECTIVES:
1. To prepare a draft management plan for long-term marsh management utilizing the baseline data which had been collected from numerous earlier studies.
2. To summarize report into an 'Options Paper' for use in ongoing discussions with the Oshawa Harbour Commission, the City of Oshawa, and the Province of Ontario, with regard to the long term preservation and wise management of Second Marsh.
3. To complete a report detailing the results of a regional market study for marsh educational and public appreciation facilities.

LOCATION OF STUDY: Oshawa Second Marsh.

DELIVERABLE PRODUCTS: Draft Management Proposal "Oshawa Second Marsh: 4 Alternatives"; plan summarized into an 'Options Paper'; and a report on economic baseline information.

BASELINE STUDIES

REGION: Ontario. FISCAL YEAR: 1984/85.

STUDY TITLE: Wetland Owner's Attitudes.

STUDY CONDUCTED BY: L. Pietraszko.

CONTACT OFFICER: D. Cowell, ORDG, 55 St. Claire Ave. East, Toronto.

BASELINE FUNDS ALLOTMENT AND AGENCY: $4.5K ORDG.

STUDY OBJECTIVE(S): 1. To determine landowner attitudes regarding various methods of preserving valuable wetlands.
2. To contact 120 landowners in 5 counties of southwestern Ontario where wetland loss has been most severe.
Owners prefer methods of protection that are least restrictive, such as the notification/registry programs described in the Landowner Notification Pilot Project.

LOCATION OF STUDY: Southwestern Ontario.

DELIVERABLE PRODUCTS: A final report "Landowner Attitudes Toward Wetland Values and Protection Methods".

BASELINE STUDIES

REGION: Ontario. FISCAL YEAR: 1984/85.

STUDY TITLE: Mineral Aggregate Resource Mapping.

STUDY CONDUCTED BY: D. Cowell and D. Coleman.

CONTACT OFFICER: D. Cowell, ORDG, 55 St. Claire Ave. East, Toronto.

BASELINE FUNDS ALLOTMENT AGENCY: $9.0K ORDG.

STUDY OBJECTIVE: To overlay selections of the Niagara, Halton, and Kitchener-Waterloo Urban Centred Regions delineating areas designated for potential extraction of various types of aggregate and CLI agricultural capability, combined with the land use mapping of the UCR's prepared by Lands Directorate.

The maps and report will provide exremely useful information regarding the implications of long term aggregate extraction on agriculture, of particular concern is the possible loss of tender fruitlands in the Niagara area.

LOCATION OF STUDY: Niagara, Halton, and Kitchener-Waterloo Urban Centered Regions.

DELIVERABLE PRODUCTS: Maps based on UCR's; and a report on the long-term implications of aggregate extraction on agriculture.

BASELINE STUDIES

REGION: Ontario. FISCAL YEAR: 1984/85.

STUDY TITLE: Review of Sediment Survey Data.

STUDY CONDUCTED BY: Conservation Management Systems.

CONTACT OFFICER: L. Kamp, Director, Water Surveys, Ontario.

BASELINE FUNDS ALLOTMENT AND AGENCY: $5.5K IWD.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY: $9.5K Water Survey of Canada, (IWD) A-Base.

STUDY OBJECTIVES: 1. Through a questionaire, to obtain information from users and collectors of sediment data, the questions are centred on: the kinds of data need; the nature of sampling networks; the perceived accuracy of the data; and methods of sampling and analysis.
2. To review literature regarding sediment associated issues.
3. To prepare recommendations for the coordination of sediment information in Ontario, data accuracy, the sampling network, and other concerns or needs of data users and collectors.

The study will be concluded during fiscal year 1985/86.

DELIVERABLE PRODUCTS: report entitled "Ontario Perspectives on Sediment Issues - Phase 1".

BASELINE STUDIES

REGION: Atlantic. FISCAL YEAR: 1984/85.

STUDY TITLE: Tropical Cyclone Climatology for Atlantic Canada.

STUDY CONDUCTED BY: AES.

CONTACT OFFICER: W. Richards (902) 835-9529.

BASELINE FUNDS ALLOTMENT AND AGENCY: $5.0K AES.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY(S): No extra funds were allotted to this project. An estimated 0.1 PY for project management was absorbed by AES.

STUDY OBJECTIVE: To up-date and consolidate a catalogue of tracks of tropical cyclones affecting Atlantic Canada and from this data base determine the areal frequency of occurrence of these storms for different intensities.

The project was managed by W. Richards and M. Danks of AES, Bedford.

DELIVERABLE PRODUCTS: Final Report, "The Climatology of Tropical Cyclones in Atlantic Canada" by E.A. Barks, February, 1985.

BASELINE STUDIES

REGION: Atlantic. FISCAL YEAR: 1984/85.

STUDY TITLE: Hydrologic Design Methodologies for Small-Scale Hydro at Ungauged Sites.

STUDY CONDUCTED BY: Acres International Limited.

CONTACT OFFICER: J.D. Keefe, Head, Engineering Division, Water Planning and Management Branch, IWD-Atlantic.

BASELINE FUNDS ALLOTMENT AND AGENCY: $5.0K IWD.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY(S): $95.0K EMR (PERD). This does not include resources required to direct the study which came from IWD-Atlantic, IWD-HQ, and EMR.

STUDY OBJECTIVES: 1. To develop hydrologic design methodologies for project definition and feasibility level studies.
2. To document the methodologies in a user-friendly computer program.
3. The study focused on streamflow and flood hydrology and, while the methods can be directly applied to small-scale hydro, they are equally applicable to a number of other areas where synthetic generation of streamflow is required, for example, water supply investigations. This study was conducted by Acres International Limited under contract and was managed by an interdepartmental team comprising IWD and EMR staff.

LOCATION OF STUDY: N.S., N.B., Newfoundland-Labrador.

DELIVERABLE PRODUCTS: Three stand-alone documents: Study Documentation Report; Applications Manual (with copy of computer programs); and Summary Report

BASELINE STUDIES

REGION: Atlantic. FISCAL YEAR: 1984/85.

STUDY TITLE: Analysis of Gannet Rock and Southwest Head Wind Data and Determination of Gust Factors over the Ocean.

STUDY CONDUCTED BY: AES.

CONTACT OFFICER: W. Richards, AES, Bedford (902) 835-9529.

BASELINE FUNDS ALLOTMENT AND AGENCY: $2.0K AES.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY: AES Atlantic Region - $1.05K.

In addition, the following activities, which were critical to the success of the project, were absorbed by respective agencies.

Agency	Activity	Resource
Transport Canada	Weather observations by lightkeepers	0.1 P/Y for 8 years
AES	Instrument maintenance & data abstraction	0.1 P/Y for 8 years
AES	Project supervision	0.1 P/Y (absorbed)

STUDY OBJECTIVE: To determine design winds and over-water gust factors for the Bay of Fundy and adjacent coastal areas.

The project involved digitizing an 8-year time series of wind records from the Transport Canada lighthouse stations at Southwest Head and Gannet Rock, quality control and statistical analysis of this data, and preparation of a report.

The project was managed by W. Richards and M. Danks of AES, Bedford.

LOCATION OF STUDY: Bay of Fundy.

DELIVERABLE PRODUCTS: Project Report, 68 pp including figures and tables.

BASELINE STUDIES

REGION: Atlantic. FISCAL YEAR: 1984/85.

STUDY TITLE: Atlas for Eastern Canadian Seabirds - Shipboard Component.

STUDY CONDUCTED BY: CWS.

CONTACT OFFICER: R.G.B. Brown.

BASELINE FUNDS ALLOTMENT AND AGENCY: $5.0K CWS.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCY(S): CWS $15.0K.

STUDY OBJECTIVE: To produce a shipboard-based atlas, illustrating the temporal and spatial seabird distributions in the western North Atlantic. This information was needed to shape departmental positions to provide advice to industry to assist them in hydrocarbon exploration and development activity.

LOCATION OF STUDY: Most work carried out at Bedford Institute of Oceanography, Dartmouth, N.S.

DELIVERABLE PRODUCTS: Atlas: Text and maps completed, manuscript at CWS-HQ awaiting publication.

BASELINE STUDIES

REGION: Atlantic. FISCAL YEAR: 1983/84 and 1984/85.

STUDY TITLE: Bridgeport Basin Baseline Study.

STUDY CONDUCTED BY: EPS and IWD.

CONTACT OFFICER: S. Day (J. Gibb).

BASELINE FUNDS ALLOTMENT AND AGENCY: $12.0K.

SUPPLEMENTARY FUNDS AND ASSOCIATED AGENCIES: $12.0K, N.S. Power Corporati on $22.0K Cape Breton Development Corporation.

STUDY OBJECTIVE(S): As part of the overall Bridgeport Basin Baseline Study: 1. To characterize the effects of the various elements of the coal cycle on freshwater resources in general.
2. To determine the current effects of the various elements of the coal cycle on freshwater resources of the basin watershed.
3. To assess of planned development to identify potential future impacts on the watershed.
4. To identify remedial measures and management strategies - alleviation of data gaps, identification of data needs, monitoring needs - to mitigate or minimize major impacts from coal-related activities.

LOCATION OF STUDY: Bridgeport Basin Watershed, Cape Breton County, Nova Scotia.

DELIVERABLE PRODUCTS: Report "Coal and the Freshwater Resources of the Bridgeport Basin Watershed, Cape Breton County, Nova Scotia"; and Map, Scale 1:1320 - Water Resources of the Bridgeport Basin Watershed - (both products received).

APPENDIX 3

PROPOSED BASELINE STUDIES (85/86) SUMMARY TABLE

PROPOSED 85/86 PROJECTS

REGION	INITIATING AGENCY	TITLE	BSP FUNDS ($K)	SUPPLEMENTARY RESOURCES ($K)	STUDY LEADER
Pacific & Yukon		No information submitted.			
Western & Northern		No information submitted.			
Ontario	CWS	Wetlands and Waterfowl Resources of the St. Lawrence River from Wolfe Is. to Cornwall.	15.0		
	AES	Climate Change and its Impact on Ontario.	7.0		
	IWD	Sediment Issues and Program Review (Phase II).	6.0		
	EPS	Toronto Harbour Baseline Study.	5.0	A minimum 63.5 will be generated from A-Base funds.	
Quebec		No information submitted.			
Atlantic	CWS	Bioenergetics and Feeding Ecology of the Common Eider.	15.0	28.3	
	EPS	Bridgeport Basin Baseline Study.	5.0	6.0	
	AES	Overview of the Problem of Iceberg Movement. and Prediction	10.0		
	AES	Sea Spray-Icing Measurement.	3.0	12.0	